FRCoin White Paper

------ Blockchain-based peer-to-peer currency system

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Contents

Part I Understanding Blockchain

1.1 The basic concept of blockchain

In 2009, Satoshi Nakamoto pioneered the era of Bitcoin, and the impact of blockchain as the underlying digital currency has quickly expanded from its breadth and depth. Create an epoch-making "blockchain."

Blockchain network

Blockchain is a new application mode of computer technology such as distributed data storage, point-to-point transmission, consensus mechanism, and encryption algorithms. The so-called consensus mechanism is a mathematical algorithm for establishing trust and acquiring rights between different nodes in a blockchain system.

In a narrow sense, a blockchain is a chained data structure in which data blocks are sequentially connected in a time-ordered manner and is cryptographically ensured to be an irreversible and unforgeable distributed ledger.

Broadly speaking, blockchain technology uses blockchain data structures to verify and store data, uses distributed node consensus algorithms to generate and update data, uses cryptographic methods to secure data transmission and access, and uses automated scripts. A brand-new distributed infrastructure and computing approach for programming and manipulating data from smart contracts composed of code.

1.2 Blockchain development

The essence of electronic cash transactions is the transfer of the value of money (or currency) assets. In fact, the concept of distributed bookkeeping brought about by the blockchain not only can be used for electronic cash transactions, it can be used to handle value transfer in a broader sense: ownership ownership and circulation of all kinds of tangible assets and intangible assets. Theoretically All can use blockchain technology to record and track, and complete peer-to-peer value exchanges. This will be a significant innovation for social business information and asset management.

However, due to the non-Turing completeness of Bitcoin system design, its system cannot handle

more complex business logic. Inspired by Bitcoin, Ethereum, which developed the public blockchain platform around 2015, will take the blockchain application further, allowing developers to deploy smart contracts on the platform to handle more complex business logic. The smart contract enables the business logic set by the code to be automatically executed according to the trigger condition without human intervention, and the contract deployment is open and transparent on the blockchain. Therefore, blockchain technology can be widely used in scenarios involving contract processing, data exchange, ownership transfer, finance, IOT, logistics, and sharing economy.

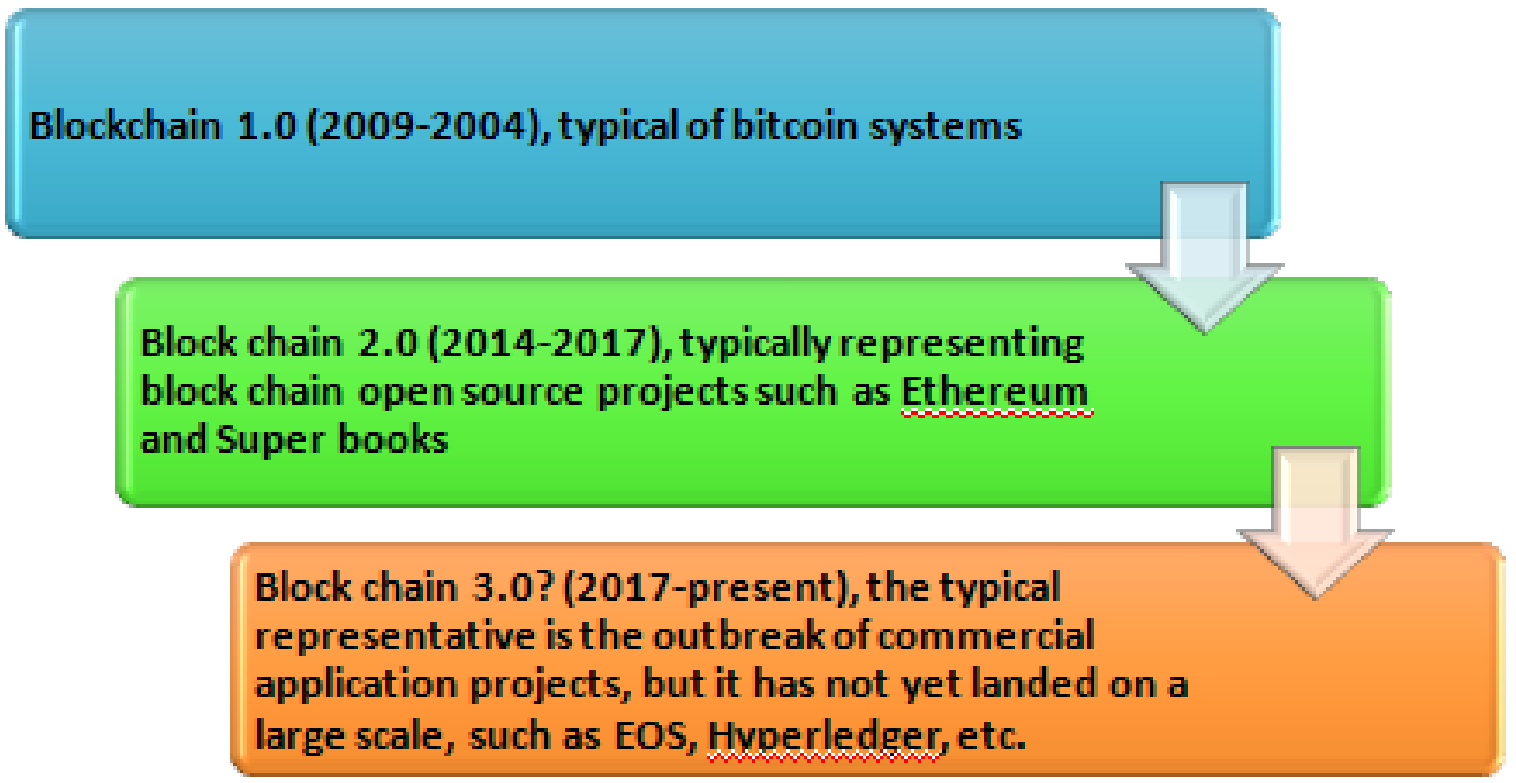


Figure: The development history of the blockchain

If it is calculated from the birth of Bitcoin, blockchain technology has been developing for nearly 10 years. Currently, the development direction of blockchain can be mainly divided into public chain and alliance chain. The former is represented by Bitcoin and Ethereum, and anyone can join it at any time. The chain record is open to everyone; the latter is designated by the specified block. The participating members of the chain form a coalition. The business dealings between members are recorded in the blockchain, which limits the use of scale and permissions. Typical representatives are the Hyperlinkger, an open source blockchain project under the Linux Foundation.

In recent years, the concept of blockchain has been continuously hotter, but the technology itself has not been commercialized on a large scale, and it is more of a pilot project for finance, logistics, and public welfare. Blockchain still has many problems in terms of performance, permission and privacy protection, and inter-chain interoperability. Its technology is still in the development stage. Relevant consulting and analysis reports show that the large-scale commercial use of blockchain will take 3-5 years, so blockchain solutions still need to be optimized by all parties to meet commercial needs.

1.3 Blockchain features and types

Blockchain, as an innovative technology system, focuses on core technologies such as distributed ledgers, encryption and authorization technologies, consensus mechanisms, and smart contracts, and forms several important features directly supported by technology.

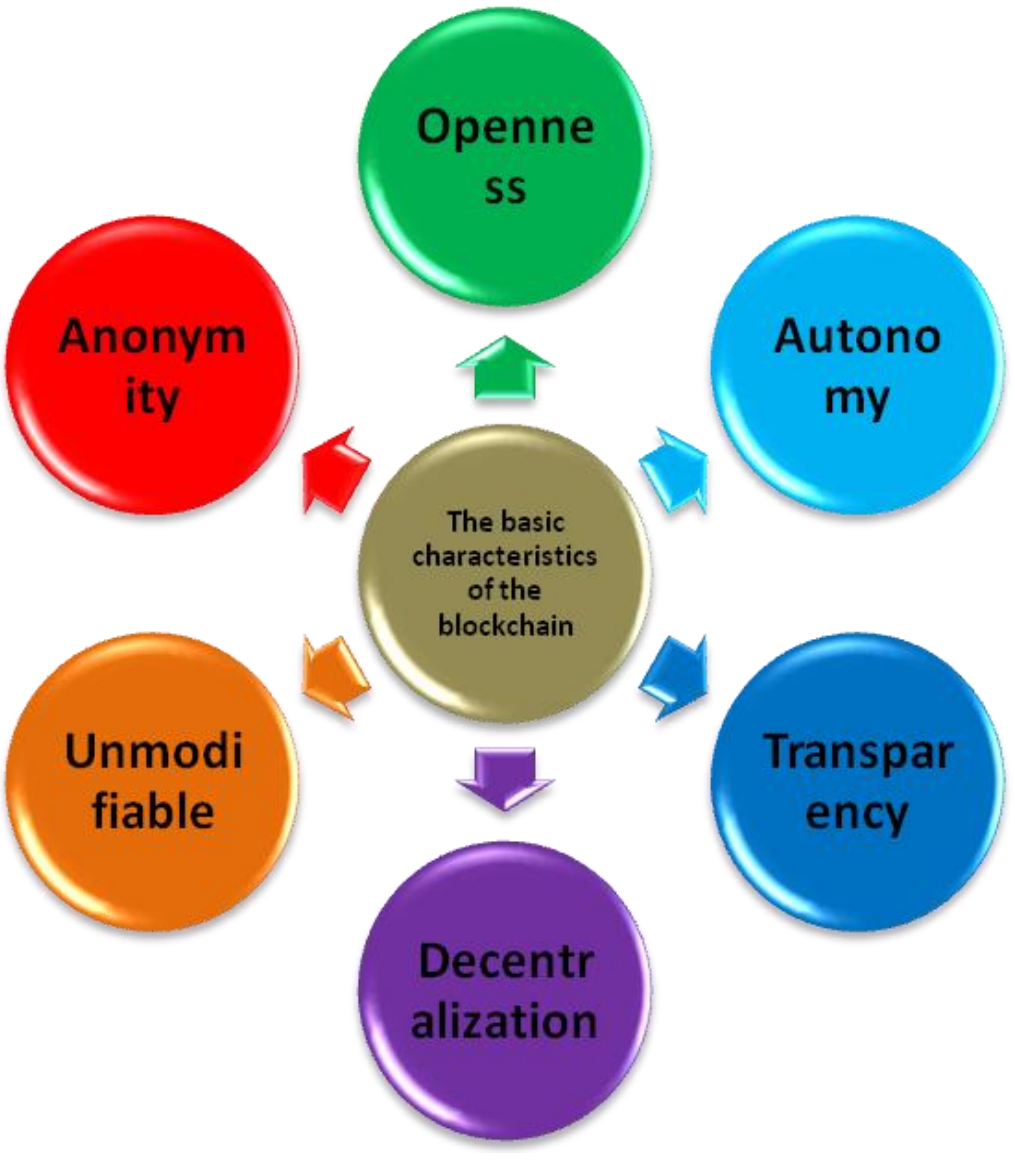


Figure: Basic features of the blockchain

A decentralization

Decentralization is the most basic feature of the blockchain, which means that blockchain applications do not rely on a centralized organization, enabling distributed recording, storage, and updating of data. Due to the use of distributed storage and computing power, there are no centralized hardware or management mechanisms, rights and obligations of the entire network node, and the nature of data in the system is maintained by the entire network nodes. In a traditional centralized network, attacking a central node can destroy the entire system. In a decentralized blockchain network, attacking a node can not control or destroy the entire network, and mastering over 51% of the network. The node is only the beginning of control.

B Transparency

The data records of the blockchain system are transparent to the entire network node. The data record update operation is also transparent to the entire network. This is the basis for the trustworthiness of the blockchain system. Because the blockchain system uses open source programs,

open rules, and high participation, the data records and running rules of the blockchain can be reviewed and traced by the entire network node, which is highly transparent.

C Openness

The openness of the blockchain means that all data of the blockchain is open to everyone (except for the blockchain system with special permission requirements) except that the private information of the parties directly related to the data is encrypted. Any person or participating node can query the data records of the blockchain or develop related applications through the open interface, so the entire system is open.

D Autonomy

The blockchain adopts consensus-based specifications and protocols to enable all nodes in the entire system to exchange, record, and update data freely and securely in a trust-free environment, transforming the trust of individuals or institutions into the trust of the system. Any human intervention will not work.

E cannot be modified

Once the blockchain system's information has been verified and added to the blockchain, it will be permanently stored and cannot be changed (except for systems with private blockchains that require special changes). Unless more than 51% of the nodes in the system can be controlled at the same time, the modification of the records in the block on a single node is invalid, so the stability and reliability of the blockchain data is extremely high.

F Anonymity

Although all data record and update operations are disclosed to the entire network node in the blockchain system, the private information of its trader is still processed through hash encryption. That is, data exchange and transactions are all anonymous. ongoing. Since the data exchange between nodes follows a fixed and predictable algorithm, the interaction of the data does not require the existence of mutual trust between the two parties. It can be performed through both parties' addresses rather than identities. Therefore, both parties need not to disclose the identity to each other. trust.

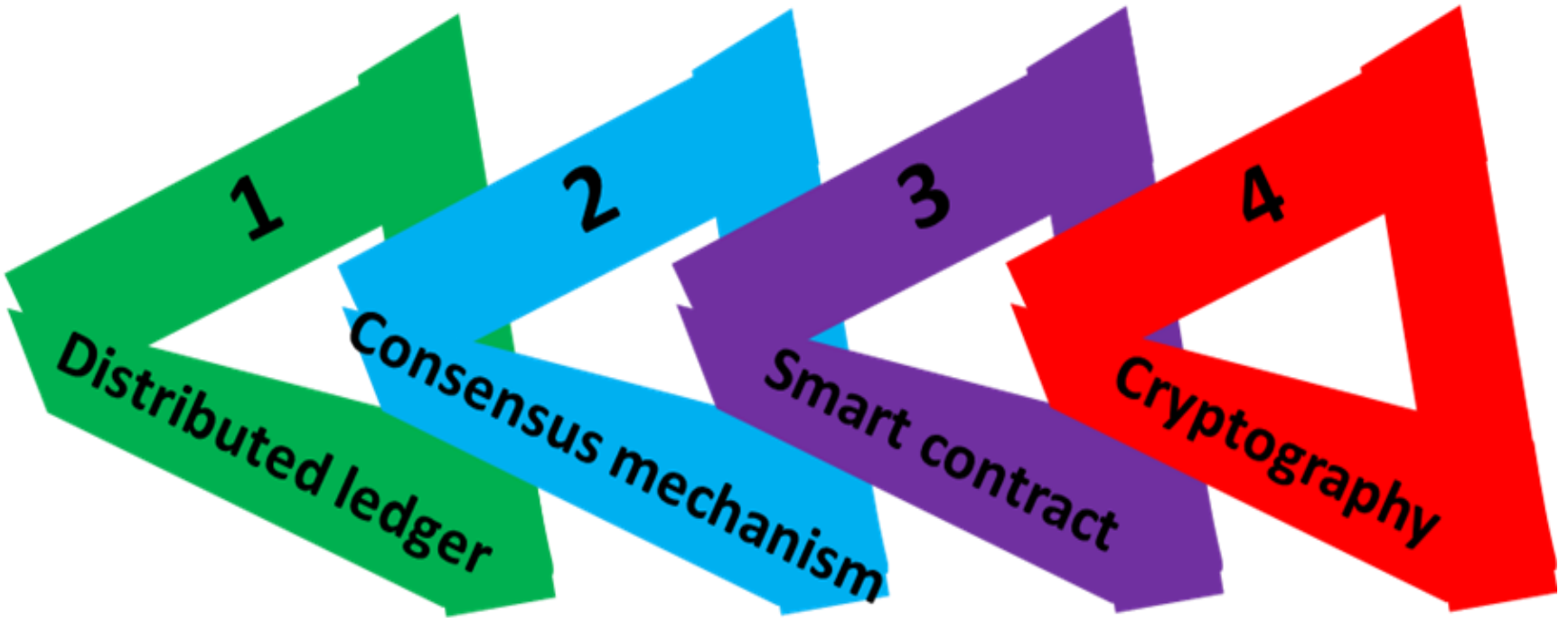
In summary, the blockchain first changes the way data is stored and transmitted over the Internet. This change essentially changes the nature of the data, that is, due to the use of specific consensus algorithms and distributed maintenance, it is actually also With the common proof of the node relationship, the storage and transmission of data cannot be tampered with.

The traditional Internet data is just a string of information composed of data. The proof of the information itself requires an additional process. In most cases, it is proved that the

attachment is completed by a third party; blockchain data is information that does not need to be proved, and the blockchain technology architecture. The most powerful function is self-proven data storage and transmission, which has new innovations in the technology model. This is also an innovative technology in the industrial revolution that subverts traditional Internet technologies.

1.4 The core technology of blockchain

With the development of science and technology, blockchain technology has more technical features from the initial version, and its core technology is manifested in the following aspects:



Distributed ledger

Distributed Ledger Technology DLT (Distributed Ledger Technology) is essentially a decentralized data storage technology that can share, synchronize, and replicate data in multiple network nodes, multiple physical addresses, or multiple organizations. Compared to traditional distributed storage systems, distributed ledger technology has two distinct features:

Traditional distributed storage systems implement data management mechanisms that are controlled by a central node or authoritative organization. Distributed ledgers are often based on certain consensus rules, and use multiple decision-making and common maintenance methods for data storage, replication, and other operations. Faced with the explosive growth of Internet data, the current method of building a data management system by a single central organization is facing more challenges. The service providers have to continue to invest in additional large-scale data centers, not only computing, networking, storage and other The problem of huge resource pool efficiency and the ever-increasing system size and complexity have also brought about increasingly severe reliability problems. However, the decentralized data maintenance strategy of distributed ledger technology can effectively reduce the burden of system bloat. In some application scenarios, it is even possible to effectively use the huge pool of resources precipitated by a large number of scattered nodes in the Internet.

Consensus mechanism

Blockchain is a distributed (decentralized) system that traces history, cannot be tampered with, and solves multi-trust issues. Distributed systems will inevitably face consistency problems, and the process of resolving consistency issues is called consensus.

Achieving a consensus in a distributed system requires relying on a reliable consensus algorithm. The consensus algorithm usually addresses which node in the distributed system initiates the proposal and how other nodes agree on the proposal. According to the difference between the traditional distributed system and the blockchain system, we divide the consensus algorithm into the consensus algorithm between the trusted nodes and the consensus algorithm between the untrusted nodes. The former has been studied in depth and is widely used in popular distributed systems. Among them, Paxos and Raft and their corresponding variant algorithms are most famous. For the latter, although it has been studied for a long time, the development of blockchain technology has been in full swing in recent years, and related consensus algorithms have been widely used. According to different application scenarios, the latter is further divided into consensus algorithms applicable to public chains represented by algorithms such as PoW (Proof of Work) and PoS (Proof of Stake), and PBFT (Practical Byzantine Fault Tolerance) and its variants. The algorithm is a consensus algorithm that is applied to the alliance chain or private chain.

Smart contract

Smart contract is a computer protocol designed to disseminate, verify, or execute contracts in an information-based manner. Smart contracts allow trusted transactions without third parties. These transactions are traceable and irreversible. Its purpose is to provide better security than traditional contract methods and to reduce other transaction costs associated with the contract.

With the emergence and maturity of blockchain technology, smart contracts are rapidly developing as an important research direction for blockchains and future Internet contracts. Blockchain-based smart contracts include event processing and preservation mechanisms, as well as a complete state machine for accepting and processing various smart contracts, and the data status processing is done in the contract. After the event information is passed to the smart contract, the smart contract is triggered for state machine judgment. If the trigger condition of one or more actions in the automatic state machine is satisfied, the automatic execution of the contract action is selected by the state machine according to the preset information. Therefore, as a kind of computer technology, smart contracts can not only effectively process information, but also ensure that the contract parties can enforce the contract without introducing third-party authoritative institutions, thus avoiding the occurrence of breach of contract.

Cryptography

Information security and cryptography are the cornerstones of the entire information technology. In the blockchain, a large number of technical achievements in modern information security and cryptography are also used, including: hashing algorithms, symmetric encryption, asymmetric encryption, digital signatures, and digital certificates.

In addition, the latest research results of modern cryptography, including homomorphic encryption, zero-knowledge proofs, etc., are applied in the blockchain, providing maximum privacy protection capabilities in the case of blockchain distributed ledger disclosure. This kind of technology is still developing and improving.

Blockchain security is a system engineering. System configuration and user rights, component security, user interface, network intrusion detection and anti-attack capabilities all affect the security and reliability of the final blockchain system. In the actual construction process of the blockchain system, a reasonable balance should be achieved in terms of security, system construction cost, and ease of use, on the premise of satisfying user requirements.

1.5 Future trends

The blockchain will have a huge impact on the existing economy and society and is expected to reshape the human Internet activities. The recent development trend of the blockchain mainly includes the following aspects:

First, the use of financial innovation to promote breakthroughs in other industries. The field of application of blockchain will start with the need for mutual trust between parties to the transaction, but it is not easy to establish areas of trust, such as finance, securities, and insurance. As application popularity and social awareness increase, blockchain will gradually penetrate into all areas of society. For example, the blockchain has been initially applied to

political elections, corporate shareholder voting, gambling, and forecasting markets.

Second, the socialization of smart contracts. In the future, all contractual agreements will be intelligent, and the use of smart contracts will ensure the reliable execution of all agreements and avoid tampering, repudiation and breach of contract. In addition to transforming tangible assets in society into digital intelligent assets for verification, authorization, and real-time monitoring, blockchain can also be applied to the management of intangible assets in the society, such as intellectual property protection, domain name management, and integral management.

Third, decentralization. The future blockchain system architecture will be to build a trustworthy decentralized system, and to promote decentralized and individualized single centers into multi-participation unified multi-centers, thereby improving trust transfer efficiency and reducing transaction costs. That is, under the circumstances of information asymmetry and uncertainty, it is necessary to establish a "trust" ecosystem that meets the development and development of various activities.

Fourth, the assets are digitized. From a long-term perspective, digitization of assets is a major trend in the future. Digitizing assets can reduce costs and reduce waste of resources to some extent. At the same time, it is beneficial for companies to use blockchain technology to encrypt and save private files, making it easier for SMEs to circulate assets and make transactions more transparent. The use of digital asset currency will enable efficient circulation in the future, enabling real-time dynamic data across time, space, and location.

Part II Switzerland - Financial Empire

2.1 Swiss financial development

Switzerland is bordered by Germany to the north, France to the west, Italy to the south and Austria and Liechtenstein to the east. The entire territory is dominated by plateaus and mountains, which is known as the "roof of Europe." Located in the center of the European continent, it is a highly developed capitalist country and one of the richest countries in the world, the country with the most stable society, the most developed economy and the highest standard of living.

Switzerland

Switzerland is also one of the most stable economies in the world. Once trade demand stimulated the emergence and prosperity of banks. In the 18th century, many Swiss people ran to neighboring countries as mercenaries. These mercenaries would send their own income back to Switzerland, so that UBS's deposits are also getting richer. More and more money, but Switzerland is small after all, there is no investment project, so bankers began to invest this money abroad and overseas, that is, the Swiss financial industry embarked on an early time globalization.

Swiss bank

Switzerland's financial industry is very developed. Switzerland has more than 600 banks and 5,070 branch offices. The bank has a total capital of more than 500 billion U.S. dollars, and the tax payment accounts for 20% of the national tax revenue. It plays an important role in the national economy. Switzerland's per capita assets and investment in foreign countries account for the first place in the world. There is a "financial empire".

The National Bank of Switzerland is the Swiss Central Bank, and the FRCoin has always been a hard currency in the capitalist world. Among the resource-seeking countries, the FRCoin has a good credit rating. In the Swiss banking sector, the five privately-owned large commercial banks that dominate are: UBS, UBS, Credit Suisse, Swiss Vaux Bank and Leyu Bank.

Swiss capital occupies an important position in international finance. It is both a short- and medium-term capital distribution center and a long-term capital market. Switzerland is also one of the world's gold trading centers. 30% of the gold needed by the European Economic Community is provided through the Swiss market. Half of the world's gold production is sold through the Swiss bank to the rest of the world. Switzerland is also one of the world's foreign exchange settlement centers and an important international capital hub for turnover, handling US$124 billion in transfers and foreign exchange operations daily. A stable political situation, a low inflation rate, a sound financial system, and the well-known "bank secrecy" system make it attractive for the flow of international cash, thus making Switzerland the fourth largest country after the United Kingdom, Japan, and the United States. Big International Finance Center.

Switzerland has introduced the bank secrecy law, which is extremely strict on the secrecy

requirements. The reason why Switzerland can become a financial power is based on its innate advantages and acquired differences in competitive strategies. It is the strategy of putting customers' interests first and keeping customers secret. To the extreme, Switzerland has only come out of a different and very competitive financial industry. Some European Union countries have asked Switzerland to provide bank information of their own nationals. They have been rejected by Switzerland. The price of rejection is not allowing Switzerland to invest in their country. You know, Switzerland has concentrated about 75% of global personal assets. It can be said that their glory today is guaranteed by reputation, at the cost of their own losses.

With the internationalization of the market, the financial sector in Switzerland has also gradually spread to various countries in the world, but it has inherited the traditional financial characteristics of Switzerland for hundreds of years. This has enabled Swiss banks to have a good reputation and trust in the rest of the world. In the future will also be in a strong position in international finance.

2.2 The characteristics of the Swiss financial industry

Switzerland's financial industry has been at the forefront for hundreds of years, absorbing a quarter of the world's personal wealth, and is stored in a small country in the Alps. It is mainly due to the unique characteristics of the Swiss financial industry, as follows:

1. Switzerland is a neutral country and guarantees the depositor's property against war during the world war. Its Swiss financial industry has not been baptized by the war. Its financial institutions are stable and its management is respected by all countries.

2. Most Swiss banks do not need to provide the true identity of the depositor to facilitate the concealment of the amount of property. This will be the reason why the rich people all over the world like to deposit their money in Swiss banks. It caters to the needs of the world's richest people and makes the Swiss banks rich.

3. A powerful online banking system. Needless to say, this is the reason why the Swiss financial industry is respected and recognized by the world. It has the ability to protect the safety of customers' assets and facilitate the withdrawal of funds by customers, bringing a good experience to users. UBS's philosophy of "Everything for customers" makes the online banking system powerful.

4. Banks spread all over Switzerland. The Swiss bank has more than 600 distributions across the country and its branches have reached 5,070. Its strong banking system has given banks a solid position in their development. Absorbing 500 billion assets from the world, the per capita assets of the Swiss are leading globally.

5. Personal and bank account privacy guaranteed by the Swiss government legislation. This is

a solid logistical guarantee for the flourishing development of the Swiss financial industry. It has made the Swiss bank’s confidentiality and confidentiality systems famous all over the world and has often become an important synonym for huge deposits and money laundering.

6. Wire transfers with banks anywhere in the world. Allowing Swiss banks to connect with financial institutions around the world can also absorb the asset wealth of countries around the world, making Swiss banks more universal and highly identifiable.

7. Many years of bank management experience has formed a whole set of outstanding personal service system, which is convenient and intimate. After hundreds of years of exploration and exploration, UBS has excellent services in personal training and services. At the same time, it has a wealth of experience in management. It is very strict and experienced in the management of Swiss banks, and it is also known as the Swiss bank in the world. the reason.

8. The world’s premier security system to ensure that the property is highly secure. It is precisely because of this that it has made the politicians of various countries, the giants of the business community, and the performing arts stars personally feel that their deposits are placed in Swiss banks and feel comfortable, and has also created the prosperity of the Swiss financial industry.

Part Ⅲ Explained by the FRCoin

3.1 What is the FRCoin?

The FRCoin, English name: FRCoin, a digital currency issued based on blockchain technology, is intended to be in the financial industry, its value is not affected by the financial crisis, warfare, etc., and has the same value as the preservation value of gold.

The FRCoin is jointly developed by the international Swiss financial team and the US Silicon Valley blockchain R&D team to jointly explore the combination of the blockchain world and the financial sector and create a digital asset currency based on the blockchain technology to solve the global problem. Due to the influence of financial crisis, warfare, and other factors, countries’ finances build a peer-to-peer global distributed network currency for the financial sector based on the characteristics of decentralized blockchain, data that cannot be tampered with, traceable, and distributed. system.

Its definition of the FRCoin is safe-haven, not affected by the financial crisis and war. At the same time, it possesses features such as collection, preservation, appreciation,

decentralization, anonymity, and global circulation, making it as valuable and precious as precious metals. The essence.

The FRCoin is the use of blockchain technology to link all aspects of the financial sector, making financial trading activities fully comply with a safe, stable, mature system, eliminating the drawbacks of currency devaluation and war finance baptism, and constructing a complete and effective financial currency. The system allows the value of the FRCoin to flow freely and sustainably develop.

3.2 The FRCoin's vision and goals

The FRCoin --- Exploring the combination of the blockchain world and the financial sector, and constructing a safe, stable and mature point-to-point distributed network currency system for the financial and monetary system. It has a core entrance to the new world of blockchain, leading the global blockchain world to a new era of financial and monetary.

The goal of the FRCoin is to use the characteristics of decentralized blockchain, distributed ledger, anonymity, peer-to-peer trading, etc., to make the assets in the financial sector have multiple characteristics such as collectability, hedging, security, risk aversion, and stability. Eliminating various insecurity factors such as the financial crisis and the impact of war, a new financial ecological currency system will be constructed.

3.3 The characteristics of the FRCoin

The FRCoin encryption digital currency is a point-to-point distributed network currency system based on the blockchain. It is a revolution that is about to change the traditional financial currency model. Through the advanced blockchain technology and distributed billing technology, the blockchain and financial currency are merged, making it possible for the FRCoin to be able to trade peer-to-peer anywhere in the world. It also has many unique features. The following aspects:

1. The FRCoin encryption digital currency is a point-to-point distributed network currency system.

2. The FRCoin is a digital currency that is both practical and collectable.

3. The FRCoin can be traded to any corner of the world in an instant, at a low transaction fee.

4. Compared to Bitcoin's cryptocurrency system, the FRCoin has a faster transaction confirmation time and higher network transaction capacity and efficiency.

5. The current full-fledged industrial chain and sufficient liquidity of the FRCoin are enough to prove that it is a mature, safe and stable commercial financial system.

6. The FRCoin is based on the scrypt algorithm and does not have any central control node. It is a global payment network.

7. The FRCoin uses stringent cryptographic protocols to make this network system fully protect the security of every user's property.

8. The FRCoin has the characteristics of decentralization, anonymization, global circulation, and low transaction fees.

9. The FRCoin digital currency system is a freeware project that follows the MIT/X11 licensing agreement. It allows you to run, modify, and copy software according to your needs.

10. The FRCoin source code is completely open. Users can operate, modify, and copy software according to individual needs. If you wish, you can even publish a modified version of the software! The binary version and the corresponding source code can be independently verified by the user.

11. More and more rich people are investing the FRCoin as a risk-averse currency.

12. Because the FRCoin is essentially the same as precious metals, it has high value and limited quantity.

3.4 The FRCoin's values

The FRCoin adopts a globally-encrypted digital currency to achieve rapid cross-purse and cross-payment, direct point-to-point transfer and currency exchange transactions, global financial and monetary activities, and effective avoidance of the global financial crisis and currency devaluation risks arising from world wars. . With its fairly stable values, it is expressed in the following points:

Chart: The Value of FRCoins

1. Safe-haven currencies: What are the so-called safe havens? Avoid the risk of currency devaluation! The FRCoin is a typical example of a safe-haven currency. Once Switzerland is politically a permanent neutral country, the stability of the FRCoin is due to its strong support

of the Swiss financial system. Therefore, the exchange rate of the digital currency of the FRCoin is generally not affected by political, war and market fluctuations. Depreciation is recognized as a safe-haven currency. As a safe-haven currency, to a certain extent, the FRCoin and the safe-haven asset gold Often show some positive correlation;

2. Preservation: It is not subject to any financial crisis, world war, natural disasters, human control, etc., and maintains the financial value of digital currency, so that the assets will be preserved without loss;

3. Investment: The FRCoin is an investment digital asset with potential. It not only has a value-maintaining function, but may, like Bitcoin, increase its value by 20 million times in nine years so that the investment assets will continue to increase in value;

4. Anonymous: Because of the anonymous nature of the blockchain, the digital currency of the FRCoin has the characteristics of anonymity. You don't need to verify the authentication data. You only need a pair of private key and secret key to operate your assets. Others have no right or ability to operate your assets;

5. Not subject to supervision by any institution: The basic characteristics of the CHF that the data of the blockchain cannot be tampered with, unless 51% of the network nodes agree and cannot be realized in reality, no one in any country can control this Data information leads to no supervision by any agency and any country.

3.5 The application of FRCoins

1) Application of entity payment

With the development of technology and upgrading of technology, more and more physical store payment systems will interface with the FRCoin system. People can use the FRCoin for physical store shopping and consumer service payments. People don't need to Bring more cash to go out, only need to carry a smart phone to be able to carry out consumer spending or shopping and other consumer service scenarios, to bring more and more convenience to people.

2) Application for online shopping

Currently, with the development of the Internet, more and more people enjoy online shopping. The FRCoin system will be able to interface with the online shopping system and use an open payment interface. People can use the FRCoin for online shopping, spending and services, and enjoy online. The convenience brought by consumption also facilitated the circulation of the value of the FRCoin.

3) Application of game recharge

Games are one of the ways in which the modern young generation entertains, and they are increasingly loved by the new generation, such as 80s, 90 years, and even 00s. The FRCoin system

can also be connected to the game system. The use of the FRCoin can recharge the game, purchase game clothes, game weapons, game equipment, game chips, etc., making the game interesting and entertaining.

4) Content Payment Application

In addition to the above application scenario, the FRCoin system also has a dockable content payment system. With the FRCoin, you can purchase paid-for knowledge content, such as e-books, creative writing, and more. This not only docks more applications, but also allows the FRCoin to have more circulation value and use value, and it is also becoming more and more extensive.

Part IV Distribution and Scheme of FRCoins

4.1 Release notes

Name: FRCoin

Abbreviation: FRC

Release time: February 2018

Total circulation: 88 million (constant and never additional)

Algorithm: Scrypt

4.2 Distribution plan

The total currency produced by the FRCoin (FRC) network is close to 4.19 times that of Bitcoin, or 88 million FRCoins, and will never be issued. The number of Swiss air-raid shelters, each FRC represents a bomb shelter and a sanctuary. Equivalent to gold, free from financial crisis and war. Among them, the founding team and founder of FRCoin holds 4 million pieces of R&D expenses to encourage team members and teams to manage and operate the manpower and material resources. They have been locked for 4 years, gradually lifted the ban in batches, and lifted the ban each year by about 8.3. Ten thousand for market circulation. The Foundation holds 6 million pieces for market maintenance and promotion operations. As a long-term community construction and network management fee, it has been locked for 4 years and gradually lifted the ban in batches. Each year, approximately 125,000 bans are released for market circulation. In order to encourage online and offline payment settlement and investor profitable investment and market circulation, the first year of monthly lifting of the ban circulation of about 1.666 million, the second year to lift the ban circulation of about 417,000, the third year of lifting the ban circulation of about 417,000, In the fourth

year, the circulation was lifted by about 333,000 every month. Through the remaining mining, each piece of data can produce 2.8 FRC, all of which were excavated in about 60 years, which is used to maintain the ecological construction of the global blockchain and the incentive for the miners, giving FRCoin a healthy development.

The sole chain currency of the entire FRCoin ecosystem, any data exchanges and asset exchanges across sub-chains need to consume parent chain tokens. When the ecosystem is formed, cross-chain data interaction becomes high-frequency events. The demand for FRC continues to increase. FRCoin holders have the original distribution rights of the parent chain's development direction.

Part Ⅴ The Architecture of the FRCoin System

The goal of the FRCoin blockchain is to provide a point-to-point distributed network currency system. Combining its own experience in financial management, banking, and other aspects, it addresses blockchain concurrency and data storage in the financial industry. Performance, scene versatility, functional completeness, ease of use, and other issues, the implementation of the FRCoin itself and the FRCoin ecosystem business, and promote the ecological development of FRCoins.

5.1 Design Principles

The goal of the FRCoin blockchain is to provide a point-to-point distributed network currency system that allows the value, security, and anonymity of financial digital currency without any central control nodes and creates an open global payment network.

The CHF blockchain follows the following top-level design principles in its architecture to ensure that these challenging goals are achieved.

Hedge

Safe-haven is the first design principle of the FRCoin. Diversification of the system, high performance requirements and distributed features. The FRCoin blockchain is positioned as a decentralized blockchain platform. It is not controlled by the central management organization. The design begins with defining the core features of hedge management and designing the protocol, data structure and function of the FRCoin blockchain. characteristic.

standard

As the blockchain application scenario is a cross-subject multi-participation and collaboration scenario, the FRCoin blockchain is based on the Swiss Bank's years of experience in managing and designing financial standardization protocols and data structures from the top level. Make the FRCoin blockchain a truly standard Internet protocol.

The FRCoin blockchain adopts a modular design. By defining a clear interface between the modules to achieve loose coupling between the modules, the whole system is well scalable. The system can use different types according to the needs of different users and scenarios. Plug-in module components.

Safety

The preservation of data needs to meet the requirements of “safety auditable”. The CHF blockchain is designed to be “flexible and auditable” as a very key principle throughout the design and implementation of each functional feature. Defined security access policies, cryptography-based complete tagging of data changes, and provision of record-level data certification.

Efficient

The CHF blockchain believes in the philosophy of "Road to Jane," and the reliable and efficient operation comes from a simple system design. The CHF blockchain carefully follows this principle in terms of protocol design, component model, system implementation, external interface, and deployment management.

5.2 Design Method

Blockchain is a new form of architecture:

a. From a technical perspective, the blockchain is a robust and secure distributed state machine;

b. From a functional perspective, blockchain is an experience-oriented data protocol that spans multiple principals.

The blockchain will become a new form of Internet protocol that will enable cross-subject business collaboration to be simple, efficient and secure. Unlike traditional Internet protocols (such as TCP/IP, HTTP, etc.), traditional protocols are oriented to the communication process, while blockchains are oriented to the experience process.

5.3 Design Features

5.3.1 Data block structure

The structure of the distributed control block header of the FRCoin system. This structure is mainly used to specify the list of smart parameters of the FRCoin system, and adds built-in model parameters and updates for the smart services for the FRCoin system. Currency system, intelligent model parameter function. Since the FRCoin system supports multiple data link structures, this control block header belongs to a dynamically variable type.

All data is stored in "recursive length prefix encoding (RLP)", which encodes an array of strings of arbitrary length and dimensions into strings. For example, ['dog', 'cat'] is concatenated (in byte array format) to [130, 67, 100, 111, 103, 67, 99, 97, 116]; the basic idea is to put the data type The length is coded into a single byte in front of the

actual data (for example, the byte array of 'dog' is encoded as [100, 111, 103], so the string is then [67, 100, 111, 103]. .) Note that the RLP encoding is recursive as its name implies; when the RLP encodes an array, it is actually encoding a string concatenated into each element's RLP encoding. It needs to be further noticed that all data in the FRCoin is an integer; therefore, if there are any hashes or addresses that begin with one or more 0 bytes, these 0 bytes should be removed when the calculation is in question. . There is no concatenated data structure in the FRCoin containing any values that begin with 0 . Integers are stored in big endian 256 format (eg, 32767 byte array format is [127, 255]).

The structure of a complete block is:

[b

lock_header, transaction_list, uncle_list

] W

here:

transaction_list = [transaction 1, transaction 2,

...

] u

ncle list = [uncle_block_header_1, uncle_block_header_2,

...

] b

lock_header = [parent hash,

sha3(rlp_encode(uncle_list)), coinbase address, state_root,

sha3(rlp_encode(transaction_list)), difficulty,

timestamp, extra_data, nonce

]

Each transaction and uncle_block_header is a table. The workload proof data is the RLP code after the block data has removed nonce.

Uncle_list and transaction_list are the tables of transactions in the block header and block, respectively. Both nonce and extra_data are limited to a maximum of 32 bytes, except that the extra_data parameter will be larger in the creation block.

State_root is the root of a Merkle Patricia tree with (key, value) pairs of all addresses, each of which is represented by a 20-byte binary string. For each address, the value field stored in the Merkel-Patricia tree is a string formed by RLP concatenated encoding of objects in the following format:

[balance, nonce, contract_root]

Nonce is the number of transactions at this address, which increases by 1 for each transaction. the purpose is:

(1) Make only one legitimate opportunity for each transaction to prevent replay attacks.

(2) Making it impossible to construct a contract with the same hash as existing contracts (more precisely, cryptographically infeasible).

Balance refers to the balance of the contract or address, in units of Wei. Contract_root is the root of another Patricia tree and contains the contract's memory when the address is controlled by a contract. If an address is not controlled by a contract, contract_root is an empty string. Note that all addresses in the main Patricia tree are 20 bytes long, even if they start with one or more 0 bytes, all indexes in the contract subtree have a length of 32 bytes, plus 0 if they are not long enough Complement the prefix.

Due to the importance of the FRCoin intelligent parameters, it is usually necessary to include the maximum system FRCoin system intelligent parameter list, the system FRCoin system intelligent transaction model list, the user-defined FRCoin system intelligent parameter list, and user-defined transactions. The model list, if it cannot be included, is prioritized in the above order. For the interior of the list, you can freely choose the layout and delete some of the content to form the final control block.

The construction process of the control block header is as follows:

(1) Select the list of smart currency parameters to be confirmed for each FRCoin, because the "miner" can get the transaction fee from the transaction, so when building a block, you will select as many transactions as possible, but you cannot exceed the current control block settings. The maximum capacity.

The data structure of a transaction is:

[nonce, receiving_address, value, [data item 0, data item 1 ... data item n], v, r, s]

Nonce is the number of transactions that have been sent at this address, encoded in binary format (eg 0 ->'', 7 ->'\x07', 1000 ->'\x03\xd8'). (v, r, s) is new Generates an Electrum-style transaction signature that is signed with the private key corresponding to the sending address. The range of v is 27 <= v <= 30. The public key and address can be directly extracted from an Electrum-style signature (65 bytes). . Conditions for legal transactions: (i) The signature has a legal format (ie, 27 <= v <= 30, 0 <= r <P, 0 <= s < N), and (ii) The sending address has sufficient funds to pay the transaction amount And transaction costs. A block cannot contain an illegal transaction.

(2) Determine the Coin base. Here, if the block is successfully constructed, the "miner" of the FRCoin will receive the proceeds (charge + reward). The control block does not support ghost

protocols.

(3) Construct Merkle tree of each set parameter list information, then generate random number nNonce according to DNN algorithm and write other parameters.

(4) The final structure of the FRCoin system control block header.

5.3.2 IPFS distributed storage system

The FRCoin adopts the IPFS file storage system. The IPFS full name is InterPlanetary File System, also known as the intergalactic file system. It is a network transmission protocol designed to create persistent and distributed storage and shared files. It is a content-addressable peer-to-peer hypermedia distribution protocol. Nodes in an IPFS network will constitute a distributed file system. IPFS is a point-to-point hypermedia protocol that allows the network to be faster, more secure, and more open. It is a global, peer-to-peer distributed version file system.

The advantages of IPFS are mainly through the underlying protocol, which allows files stored on IPFS systems to be quickly obtained anywhere in the world without being affected by firewalls (no network proxy is required).

DARE is a distributed computational engine of the FRCoin system. It has a built-in general-purpose virtual machine (HVM), load balancing, QoS, and SDK. HVM is a general-purpose virtual machine similar to the JVM. It is an imaginary computer and passes through it. This is accomplished by simulating various computer functions on an actual computer. In order to improve the efficiency of smart contract execution, first use the JIT (Just-In-Time Compiler) to compile smart contracts into bytecodes. When the virtual machine executes bytecodes, the bytecodes are interpreted as execution of machine instructions on a specific platform.

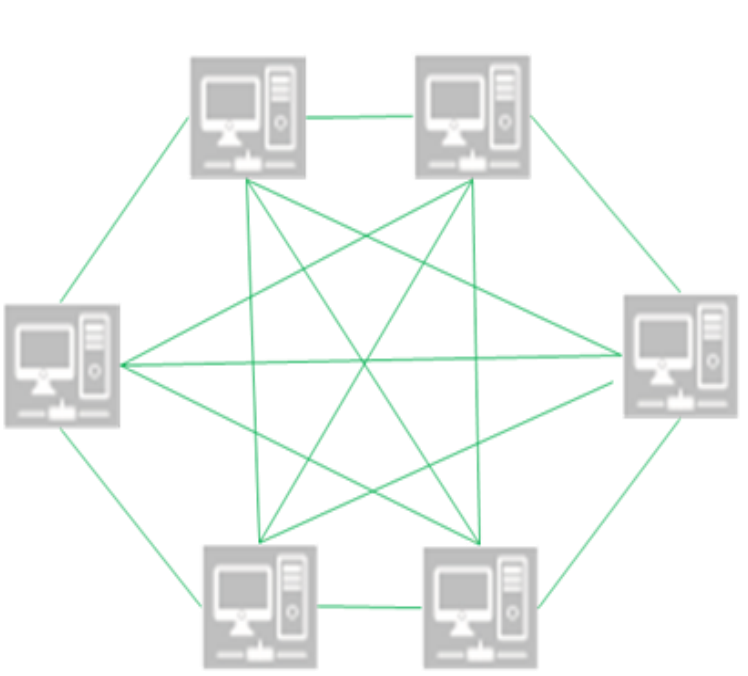
It is responsible for initializing the virtual machine environment, initializing and mounting LVDFS, initializing DDVP, and distributed computing coordination during runtime of the blockchain application. Both computing and storage support distributed deployment.

5.3.3 RTXP open source agreement

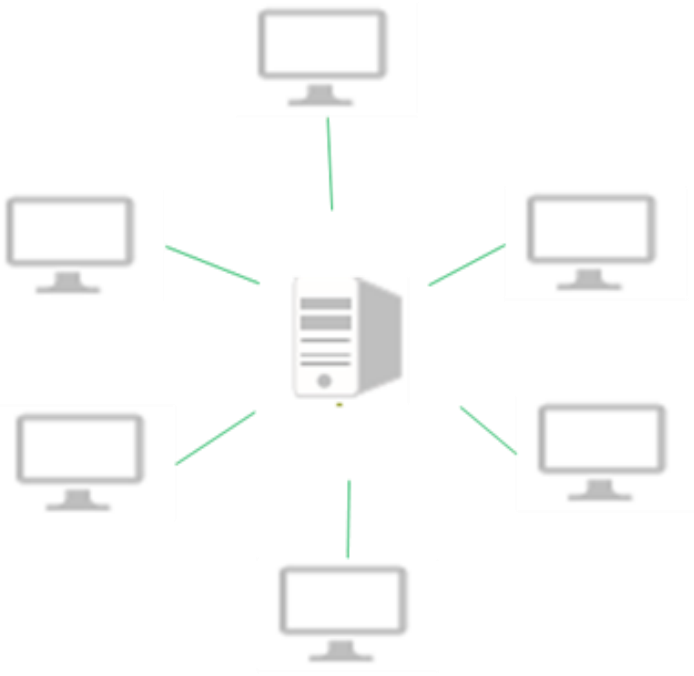
The FRCoin system uses a blockchain P2P network based on the RTXP open source protocol, allowing users to conduct point-to-point currency transactions and instant settlement, and can easily and easily convert trading assets (such as e-wallet, traditional currency and various other forms). The assets are as simple as sending emails, significantly reducing the risk of cross-bank transfers, especially in the international transfer process and high transaction fees.

The data transmission and signaling exchange of each node in the blockchain network is an important communication guarantee achieved by the data distribution or consensus mechanism. The design of the Grand Slam system supports the configuration of P2P networks, communication mechanisms

and serialization mechanisms, according to different The scenario requires flexible protocol usage. In terms of communication security, it is possible to flexibly support secure communication protocols such as HTTPS, TLS, and WSS (Secure Websockets). On the need to establish a platform to apply external service interfaces, authentication extensions that support OAuth can be extended.



P2P network



Centralized network

Different from the centralized network model, each node in a P2P network has equal status in the computer. Each node has the same network rights and there is no centralized server. All nodes share some computer resources through specific protocols. P2P network technology is one of the core technologies of the Grand Slam system architecture.

5.3.4 DPOS consensus mechanism

The consensus mechanism of the FRCoin system used the DPOS consensus mechanism in the earlier period. The Chinese name is called the share authorization certification mechanism (also known as the trustee mechanism). For the cryptocurrency of the DPoS mechanism, each node can create blocks and follow individual The proportion of shares held is "expense." The DPoS is created by a community-recognized trusted account (trustee, the top 101 votes). In order to become an official trustee, users must go to the community to canvass votes and get enough users' trust. Users vote according to the percentage of total amount of crypto currency they hold. The DPoS mechanism is similar to a joint-stock company. Common shareholders cannot enter the board of directors and must vote to elect representatives (trustees) to make decisions on their behalf.

The 101 trustees can understand 101 pools, and the 101 pools have exactly the same rights. Users holding cryptocurrencies can change these representatives (mine pools) at any time by voting. Provided they have unstable computing power, the computer is down, or they try to use their power to do evil, they will be immediately kicked by angry voters. The entire system, and reserve representatives can always top.

advantage

Lower energy consumption: The DPoS mechanism further reduces the number of nodes to 101. Under the premise of ensuring network security, the energy consumption of the entire network is further reduced, and the network operating cost is the lowest.

More decentralized: At present, personal mining is no longer practical for Bitcoin. Bitcoin's computing power is concentrated in the hands of several large pools. Each pool is centralized, just like As a trustee of DPoS, the cryptocurrency of the DPoS mechanism is more decentralized. The cryptocurrency of the PoS mechanism (such as the future currency) requires the user to open the client. In fact, the user does not open the computer every day. Therefore, the real network node is maintained by several shareholders, and the degree of decentralization cannot be matched with the DPoS. The mechanism of cryptocurrency compared.

Faster verification speed: 10 seconds per block, about 1 minute for a transaction (after getting 6-10 confirmations), and a full 101 block cycle takes only about 16 minutes. Bitcoin (PoW mechanism) takes 10 minutes to generate a block, and it takes 1 hour to complete a transaction (after 6 blocks are confirmed).

5.3.5 The safest asymmetric security encryption algorithm

Asymmetrically encrypted public and private key pairs are used in the FRCoin to build trust between nodes. The asymmetric encryption algorithm consists of a corresponding pair of unique keys (ie, a public key and a private key). Any person who knows the user's public key can encrypt the information with the user's public key and interact with the user to implement secure information. Because there is a dependency relationship between the public key and the private key, only the user holding the private key can decrypt the information. Any unauthorized user or even the sender of the information cannot decrypt the information.

The encryption feature has the following features:

a) Support for international mainstream encryption algorithms, such as symmetric encryption algorithms such as AES256 and asymmetric encryption algorithms such as RSA and ECC;

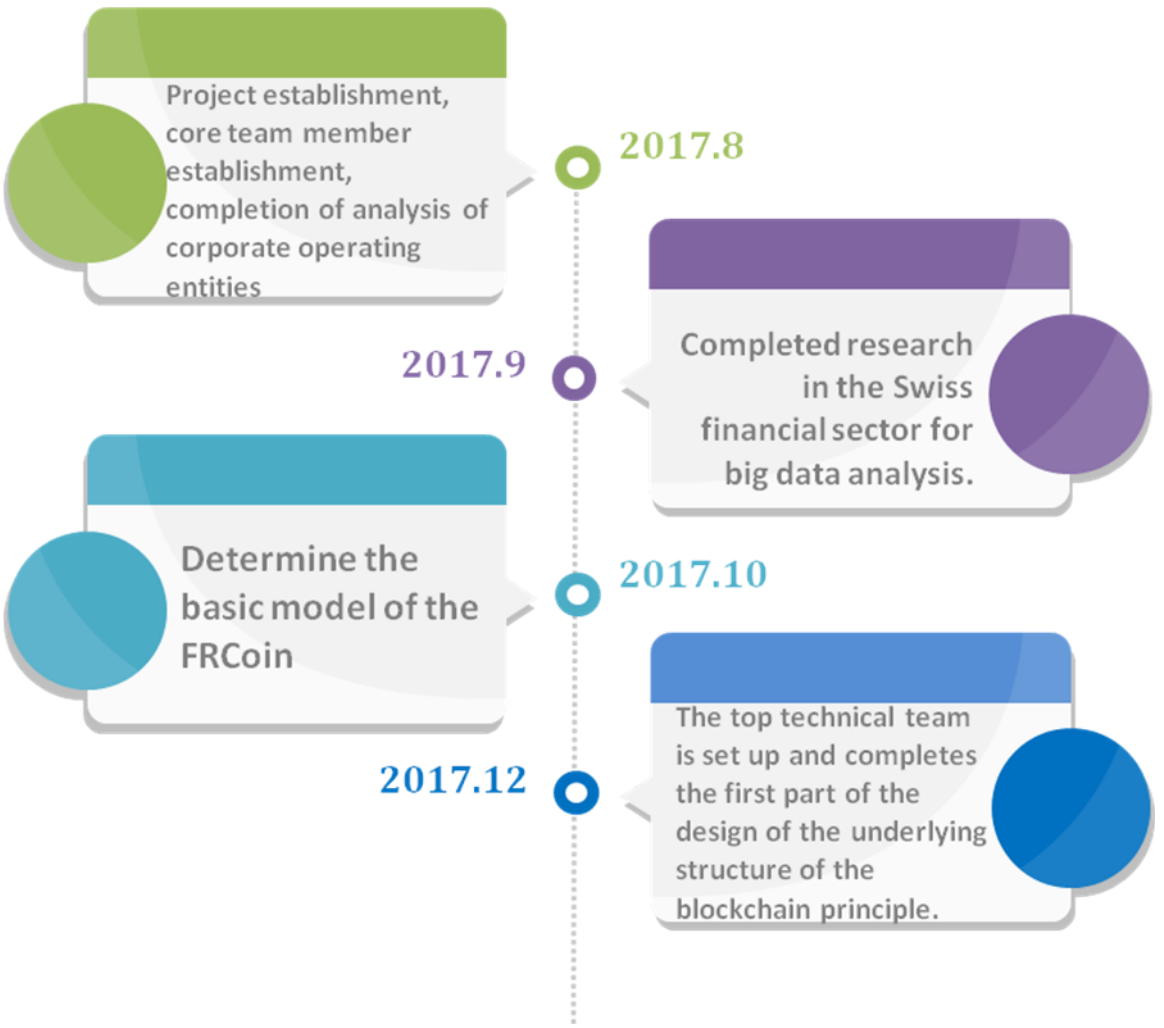
b) Supports US cryptographic algorithms, such as SM4, SM7, etc. symmetric encryption algorithms and SM2, SM9, etc. asymmetric encryption algorithms;

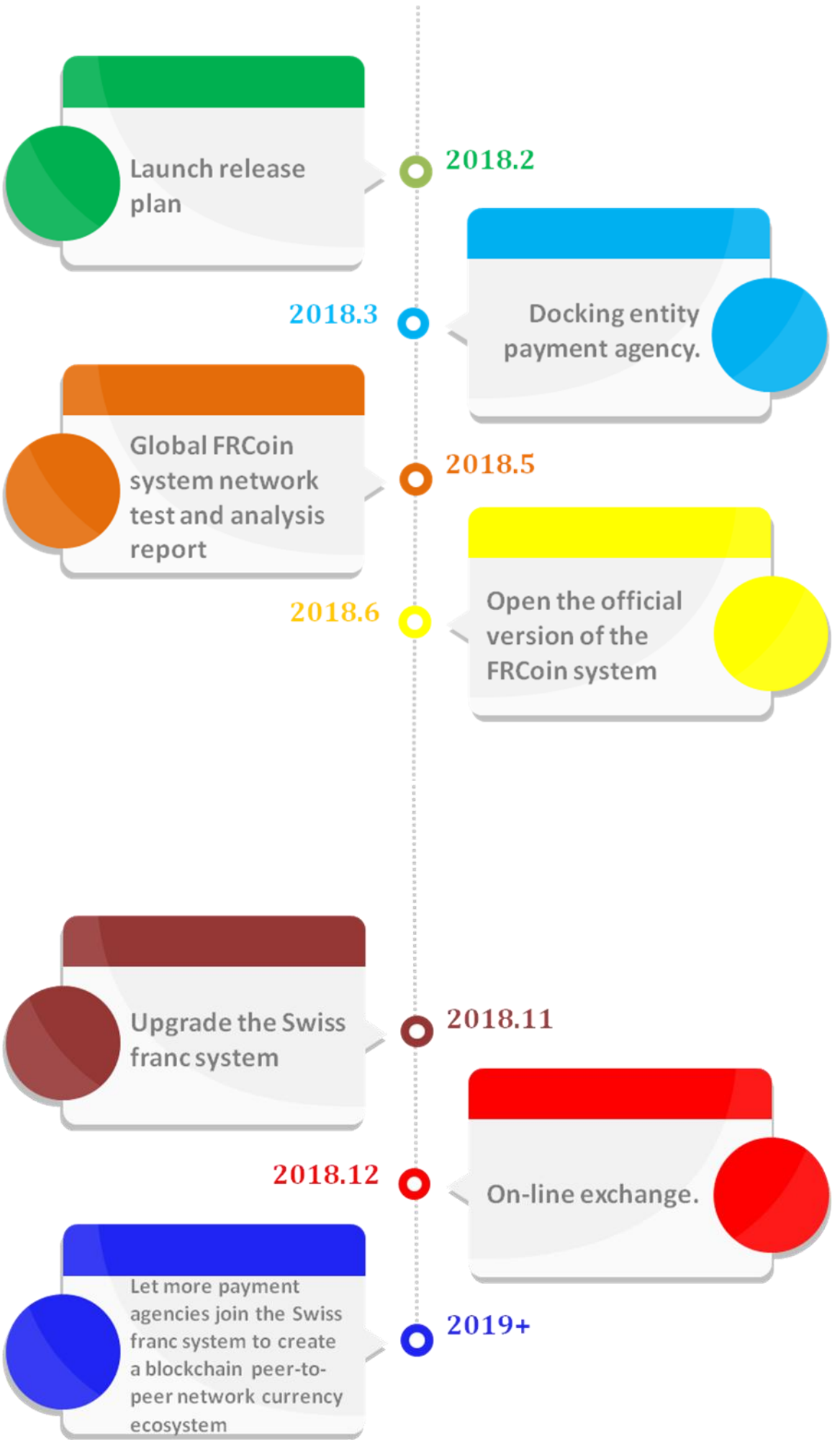
c) should have a clear key management program to ensure the normal operation of the underlying blockchain security mechanism;

d) The encryption algorithm should have the ability to resist cracking. It is advisable to regularly audit the security of the encryption algorithm, and if necessary, to use a higher encryption algorithm to break the computational complexity.

In order to prevent abuse of resources on the FRCoin system, generate excessive junk transactions, and improve platform security, the FRCoin system deducts a certain amount of energy particles from the operation and storage of network transfer and smart contract users. Someone may vote to determine whether or not to implement the energy particle deduction mechanism and deductions for the above actions.

Part VI Development Route Planning





Part VII Future Value Analysis of FRCoins

In the near future, it is foreseeable that billions of people will save their wealth in the form of digital assets. These wealths are not only in the narrow sense of money, physical assets, but also virtual assets: the business activities you live in will There will be a strong market potential, such as income or economic activity, and people will need to keep their virtual assets in one place.

Under the FRCoin system, there is no longer a gap between the exchange of virtual assets and

physical assets. The FRCoin has a complete structure and unique encrypted digital currency attributes. It also possesses multiple attributes such as hedging, collecting, and hedging. It avoids the devaluation or loss of assets due to financial crisis and warfare factors, and provides the entire personal assets. The value-preservation and security mechanisms allow the virtual assets to achieve unlimited interactions between different periods and different fields so that the virtual assets also have clear and circulated ownership.

The FRCoin (FRC) will be issued simultaneously in more than 20 countries and regions around the world in 2018, and will stand at the peak of the world's financial industry in the shortest possible time, so that we can wait and see the future value of the FRCoin.

Part Ⅷ Team Introduction

【Core team members】

(1) CEO - Martin Hannes Graf

He graduated from the University of Zurich, Switzerland, majored in finance, once held the position of President of Switzerland UBS Bank Branch, has many years of financial management experience, has profound insights and analysis of the banking system, is also a member of the early blockchain association, began to contact the block in 2011 The chain technology industry is a witness to the development of the currency circle community and has unique insights into blockchain technology.

(2) COO - Roger Federer

He graduated from the University of Bern and worked as the operations manager of Union Bank of Switzerland. He is responsible for the management of more than a dozen departments, the planning of financial activities, and the marketing of new financial products. He has extensive operational management experience. It has explored many unique operating plans and design solutions for the financial sector.

(3) CTO- William Horsepower

More than 10 years of experience in software development, experienced C++ programmers, participated in the development and management of several major Internet projects, developed for well-known companies such as Google Inc., USA, and began to explore and apply blockchain technology since 2014 A firm technical foundation was established to provide sufficient technical support for the realization of the strategic concept of the Swiss franc system.

(4) CMO- Edward Booth

Once he was the director of art, in the budding period of entrepreneurship, after the rise and fall of enterprises, they made many achievements in various aspects such as people, things, finances, and things. In early 2013, the feasibility analysis of the organization's technology for medical projects, through the establishment of projects, team formation, organization development, and technical support, has created a strong team and products, and has deep market research experience in the international financial market.

(5) SE - Parker Scott

JAVA software engineer, graduated with a bachelor's degree in software from the University of Chicago, worked in large-scale development companies such as Apple Software, has more than five years of work experience, and entered Ethereum a few years ago. His current job is to use Solidity, Python. , C/C++ and C# languages for programming.

(6) LO - John Born

He graduated from Harvard University in the United States with a Bachelor of Law degree and was admitted as an attorney in England, Wales, and Hong Kong. She is also qualified as a Chartered Management Accountants Association. Since serving as an international law firm, he has served as deputy director of legal counsel for famous hospital companies. Lawyers have extensive experience in dealing with legal issues related to commercial law, corporate and commercial transactions, and IPOs, private equity investments, mergers and acquisitions, and financing.

Part Ⅸ Legal Affairs and Risk Warning

9.1 Legal Affairs

The FRCoin project will establish a BVI company established overseas, the FRCoin foundation. The Foundation will act as an independent legal entity and be solely responsible for organizing

teams to develop, promote and operate the FRCoins project and assume all related responsibilities.

The FRCoins Foundation will strictly comply with the laws and regulations of the BVI location, exchange them in a proper manner with specific groups of people, and give it a digital currency of FRCoins. Due to legal restrictions on the country's citizens or groups, digital currency FRCoins will not conduct open crowdfunding or public offerings in certain countries. The digital currency, the FRCoin, is a virtual commodity that is used for practical purposes and is not a securities nor a speculative investment vehicle.

The income of the FRCoin Foundation in the exchange of digital currency FRCoins will be used by the FRCoins Foundation primarily for technology development, marketing, community building, financial auditing, and business cooperation.

The FRCoins platform is still likely to be challenged and regulated by competent authorities in different countries around the world. In order to meet and comply with local laws and regulations, the FRCoins platform may not provide normal services in some areas.

9.2 Risk warning

This document is for information purposes only and does not constitute any opinions or investment opinions relating to the purchase or sale of native digital assets in the future, nor is it a contract or commitment in any form.

Once investors participate in private equity and sales, they understand and accept the risk of the project, and are willing to personally bear all the corresponding results or consequences. The platform clearly stated that it will not bear any direct or indirect losses caused by participating in the platform project.

The original digital asset involved in this project is an encrypted digital code used on the platform and does not represent platform project equity, claims, income rights or control rights.

Risk Tips Related to FRCoins

Risk due to user's personal wrongdoing

1) Risk due to loss of private key:

Before the FRCoin is assigned to the participant, the participant will receive the public key account associated with the FRCoin. The FRCoin public key account can be entered by the participant's randomly assigned private key, and the private key can be forgotten to be lost. The FRCoin of the public key account. It is recommended that you practice how to practice so that participants can safely back up the private key on multiple local devices, preferably in a non-network environment.

2) Risk of leakage of private key to third parties:

Any third party's individual or organization may be able to process the FRCoin of the

corresponding account after obtaining the private key of the participant's public key account. Participants are advised to protect related equipment to prevent unauthorized landings and reduce risk.

3) Possible risks due to participation in voting:

When the FRCoin holder participates in the voting, due to malicious or irresponsible voting behavior, it is very likely that the FRCoin will be lost.

Due to cyber security-related risks during the use of FRCoins

1) The risk of unofficial FRCoin network substitution:

After the FRCoin coin network system was developed, it was very likely that there would be plagiarism and the establishment of a similar network system by other people because of open source code and protocols. The official FRCoin network system may need to compete with these plagiarized network systems, and the negative impact on the FRCoin network system needs all users to bear.

2) Risk of illegal invasions from malicious third parties:

Malicious third parties such as hackers, other teams or organizations may attempt to intervene in the development of the FRCoin network system. They may adopt but are not limited to the following methods: DDOS, Sybil, spoofing, smurfing, or consensus-based attacks.

3) Due to the risk of infrastructure software security vulnerability in the FRCoin network system:

This network system is an open source system, and there are staff or other third-party agencies of FRCoins who intentionally or unintentionally introduce bugs into the network core system. This will result in the use of FRCoins as a risk and loss.

4) Significant technological breakthroughs in the field of cryptography will cause hidden weaknesses to be tapped and exploited:

Cryptography technology is an important part of blockchain technology. Advances in cryptography or the development of other high-tech technologies may pose risks of theft or loss of the FRCoin network system and the FRCoin.

5) The risk of the failure of the FRCoin network system:

As a relatively high-tech system, the FRCoin network may generate unacceptable or unexpected network failures. At the same time, it may also lead to the risk of the disappearance of the FRCoin or other risks to the market.

6) The FRCoin may be exposed to the risk of mining attacks due to its high value:

For many decentralized crypto tokens and virtual currencies, the FRCoin generated by the blockchain technology of the FRCoin network system may be attacked by mines, including not limited

to double attacks and large pool attacks. , "selfish mining" attacks and competitive conditional attacks, etc., may also lead to the emergence of newer and more sophisticated mining attacks, which pose a great risk to the operation of the FRCoin coin network system.

Risk due to market uncertainty

1) The risk of small users of the FRCoin system:

The FRCoin system will generate corresponding value over time. If the FRCoin network system is not used by more businesses, individuals, or other institutions, it will not be able to generate more public attention and it will have a small number of users. , may limit or reduce the use and value of the FRCoin.

2) The risk of the lack of liquidity due to the exchange of FRCoins:

At present, the FRCoin has not yet been traded on the exchange. If the exchange is open to trading, it is very likely that the exchange is relatively new and it knows little about various laws and regulations. Compared to those who have established for a long time, there are other mature virtual ones. For exchanges where the tokens are normally traded, the new exchanges are prone to fraud and failure. Exchange issues may cause a significant portion of the FRCoin transaction to be subject to fraud or other operational risk issues, which would result in a lower value and liquidity of the FRCoin.

3) The development of the FRCoin network system does not keep up with the expected risks of FRCoin holders:

The FRCoin coin network system is still in the development stage, and it may undergo great changes before it is formally released to the public. Participants' expectations for the FRCoin or network system may differ from the actual release time, and they may also be Changes in the actual situation in design and implementation have led to the inability to release plans.

4) The risk that the participant cannot get insurance in the face of loss:

Unlike FRCoin public-key accounts and bank accounts, other financial institution accounts, or other social service accounts, the FRCoin foundation does not normally purchase insurance on network systems. When the FRCoin loses or the network system loses value, there will not be any insurance institution that can provide a claim service to the holders of the FRCoin.

5) Risk of dissolving the FRCoin:

There are various factors in the FRCoin project. For example, Bitcoin, the value of Ethereum, the failure of commercial operations, or the claim for intellectual property rights, the FRCoin project may not be able to continue to operate, resulting in failure to successfully publish or disband the team.

6) Risks of the jurisdictional or administrative department's regulatory policies in the relevant regions and countries:

Blockchain technology is currently supported or recognized worldwide, but it has also been scrutinized by various regulatory authorities. The functions of the FRCoin network and the FRCoin may be affected by some regulatory policies, including but not limited to restrictions on the use or ownership of the FRCoin, which may hinder or limit the development of the FRCoin network system.

7) Other unknown risks:

Blockchain technology and the corresponding digital currency technology are relatively new and not fully validated technologies, and there may be more unpredictable risks. Risks may appear in more ways.

This document may be modified or replaced at any time. However, we have no obligation to update this version of the white paper or provide readers with additional information.

Attachment: Terminology

Bitcoin: Bitcoin is an encrypted digital currency, which was launched in 2009 by an anonymous developer, Satoshi Nakamoto, as open source software.

Blockchain technology: referred to as BT (Blockchain technology), also known as distributed ledger technology, is an Internet database technology that is characterized by decentralized, open and transparent, so that everyone can participate in database records.

FRC: Short for FRCoins,

PoW: Workload Proof Consensus Mechanism. One party (usually called the certifier) submits a calculation that is known to be difficult to calculate but is easy to verify, and anyone else can verify this answer to be confident that the prover has completed a large amount of computation in order to obtain the result.

Transaction: In the white paper is a computer terminology, expressed in English as Transaction, which is equivalent to the meaning of another computer term “transaction”. It does not refer to transactions in the context of business. It is only due to the conventional translation in the context of the blockchain. For the "transaction", this article follows this habit.

Virtual Machines: In this article, state machine technology, rather than virtualization technology (such as VMWare), is the operating environment for the programming language of smart contracts.

DPOS: also known as entrusted equity work proof, is a new algorithm for securing cryptocurrency network security. While trying to solve the problem of traditional proof-of-work (POW) adopted by Bitcoin and the POS (stock proof mechanism) adopted by NXT, it can also counteract the negative effects of centralization through the implementation of technology-based democracy. .

Distributed: A distributed system is a system consisting of a set of computer nodes that communicate through the network and work together to accomplish common tasks.

Consensus mechanism: Consensus is a process in a distributed system that is used to achieve data consistency across all nodes and agree on a proposal in a network that involves multiple unreliable nodes.

Smart contracts: Smart contracts are computer protocols designed to disseminate, validate or enforce contracts in an information-based manner. Smart contracts allow trusted transactions without third parties, which are traceable and irreversible. The smart contract concept was first proposed by Nick Szabo in 1994. The purpose of smart contracts is to provide better security than traditional contract methods and to reduce other transaction costs associated with contracts.

Website: https://www.frcoin.ch/